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ABSTRACT

As a working definition, innovation in the context of higher education involves substantive changes and reforms in instructional methods, the use of student and faculty time, and the process of learning. These observations are based primarily on the results in some 75 projects underway in the California State University and College System. The findings, which should have special meaning for planners, include student, faculty, and administrator reactions to innovations. Students seem to like the experimental programs in which they participate, even when assigned to them at random. Faculty participating in innovative programs generally express satisfaction with the experience and a willingness to repeat it--even though most report working far harder than they had anticipated. A variety of time-shortened degree programs and self-paced courses seem to be demonstrating that a substantial minority of students are interested in and capable of moving more quickly through their college education. As innovations take hold, changes in the higher education enterprise will follow. If existing procedures cannot accommodate innovative programs, they must be adjusted accordingly. To permit past routines to stifle the new is contrary to the fundamental spirit of American higher education.
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Innovation: The New Juggernaut?

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Innovation, as John M. Smart sees it, is only one of a series of "juggernauts"—or vehicles of change—that have swept higher education in recent years. Others include the wave of expansion in the 1960's, "the pursuit of excellence," open admissions, affirmative action, and "accountability." Smart, who is deputy state university dean for new program development and evaluation in the Office of the Chancellor, California State University and Colleges, has taken a close look at the innovation juggernaut and, in the following article, urges planners to climb aboard the innovation band wagon—or should we say juggernaut.

Where will the juggernaut of information go? How many passengers does it carry? What is its momentum? What fundamental changes does it hold in store for higher education? All of these are questions to which academic, fiscal, and physical planners should address themselves.

As a working definition, innovation in the context of higher education involves substantive changes and reforms in instructional methods, the use of student and faculty time, and the process of learning. It is not limited to the entirely new. An instructional approach commonly employed on one campus or in one discipline may be innovative at another institution or in another discipline.

Interest in innovation does not appear to be a passing fad. Lingering dissatisfactions of the sort that sparked the campus upheavals of the 1960s created a desire for change and innovation among substantial numbers of students, faculty, and administrators. The all-too-sudden reversal of enrollment trends prompted a search for new instructional approaches designed to retain students already enrolled or attract new ones. The presence of increasing numbers of minority and educationally deprived students raised questions about traditional approaches to instruction and gave rise to a new emphasis on *how* students learn, not simply what they learn.

Innovation, to some state budget officials and administrators of hard-pressed private institutions, is

seen as a possible answer to rising costs in the labor-intensive industry called higher education. Administrators and friendly critics have encouraged innovation as a means of stimulating collegiate students and put an end to stagnation on the campus. Younger faculty members may view innovation as a way of gaining an advantageous position in the fiercely competitive retention and tenure market. Some older faculty members find innovation provides the personal challenges once provided by the practice of college-hopping and/or by generously funded research projects.

The Silent Majority

None of this is to say that interest in innovation is pervasive. The vast majority in higher education evidence little concern over the need to develop new methods or to attract new student audiences. But the number and variety of innovations being tried throughout higher education appear to be growing and clearly are becoming more visible. Assumptions about academic conservatism among faculty, generated by gloomy study findings of the past, may have to be re-examined.

Put another way, the juggernaut of innovation is rolling and subject to bursts of speed when prodded by the ferment of the times, by study groups such as the Newman task force, and by outside funding from foundations or agencies like the federal Fund for the Improvement of Postsecondary Education. And the

juggernaut's passengers, while not large in numbers, form a significant and often quite visible minority on the campuses.

How do we assess the impact of innovation on higher education in general and determine whether today's innovation should become tomorrow's tradition? We know comparatively little about the long-term usefulness, cost, and value of many innovations. In some instances, experimentation is undertaken on the assumption that a new approach has value simply because it is new. The expected outcomes are thought to be desirable because they enhance democratization and emphasize the individual rather than the group. But innovation should not be evaluated through such blind faith. There has been little effort to measure the outcomes of innovative projects to facilitate even the most subjective of assessments. And, even when an entire institution is regarded as innovative, most innovative programs have not been systematically evaluated in the light of hard data.

The State of the Art

While comprehensive reviews may be lacking, it nevertheless is possible to offer some tentative findings on the state of the innovation art on the national scene. These observations are based primarily on the results in some 75 projects under way in the California State University and Colleges system. The projects, supported through special state and foundation funding, span the gamut of innovation: time-shortened degree programs, self-paced learning, open laboratories, credit for off-campus experience, and the like. The findings, which should have special meaning for planners, include student, faculty, and administrator reactions to innovation.

It may be attributable to the Hawthorne effect, but students appear to like the experimental programs in which they participate, even when assigned to them at random. The student in a modularized course, an independent study program, or a mediated, non-traditional course, when asked will express general satisfaction with the activity and a desire for more like it. Often, he will report working a good deal harder than in traditional courses. He probably has.

However, student adjustment to some kinds of innovation may not be easy. It may be very difficult for some to complete a self-paced course on schedule, particularly if conventional courses are taken concurrently. Individualization and self-pacing require self-discipline. For some students, procrastination may win out. Faculty awareness of the problem, pre selection of

students most capable of independent work, and orientation programs may minimize the problem.

Middle-Level Coolness

Middle-level managers remain cool to innovation. Deans and department heads seldom share the enthusiasm of a faculty member with an idea or of the president or vice president who may see innovation as a way to "charge up" the campus. Faculty in traditional programs may resent the allocation of resources to innovative programs and chairmen and deans are caught in the middle. Business officers, facilities managers, and others like them, accustomed to established and orderly approaches to campus operation, may find innovation a disturbance.

Most innovative programs require substantial changes in the allocation of faculty time. While the true distribution of faculty time in traditional programs is seldom known, it seems clear that innovation will require increased faculty time in program development and management, less time in the classroom, more time in contact with individual students, more time in student evaluation, and more time in utilizing student feedback to revise teaching materials.

Innovation probably will lead to the realization that there is need for faculty retraining or development if the innovation is to be broadly adopted. Improved skills will be required in communicating with students, evaluation techniques, the use of educational technology, applications of instructional design, and the ability to redefine courses on the basis of behavioral objectives. But, to start such programs is no easy task.

Faculty participating in innovative programs generally express satisfaction with the experience and a willingness to repeat it—even though most report working far harder than they had anticipated. Campus, community, and professional activities may have suffered as a result. Results from a number of programs involving intense faculty-student contact tend to support the current folklore concerning the phenomenon of "faculty burn-out" in innovative projects.

The Impact of Innovation

What of the various innovative programs themselves? A few observations that have import for planners can be offered. Among them is the fact that a variety of time-shortened degree programs and self-paced courses seem to be demonstrating that a substantial minority of students are interested in and capable of moving more quickly through their college education. But, as suggested earlier, many students find it difficult to be their own task-masters. The development of ways to

anticipate individual student responses to increase independence should be first on the agenda of the innovator and planner.

Credit by examination, though antithetic to many in higher education, is beginning to prove itself with students and some faculty and, in the long run, we can expect more and more students to gain credit in this manner, particularly through the use of externally developed examinations. On the other hand, the use of campus-developed examinations probably will be limited unless it can be demonstrated that the faculty workload in preparing examinations, counseling, and evaluation, is less costly than the workload in traditional courses.

The promise of educational technology remains just that. The hardware may be available, but the cost of developing and updating software too often exceeds the cost of more conventional methods of instruction. Initially, the use of videotape for observation in such areas as nursing or special education may hold the best promise for economical use. The video cassette, with its "view-on-your-own" capability, applied to self-paced learning may be one way of the future. A systems approach involving teams of faculty and technical personnel seems to offer the best promise for improving the learning experience through the use of the new media. But the dollars and the trained and receptive personnel required for such an approach remain in short supply.

Off-Campus Experiences

The level of rhetoric about credit for off-campus experiences far outstrips the techniques and procedures developed to date for the award of such credit acceptable to faculty developed to date for the award of such credit. The costs of the review and crediting process must be weighed against expected income. However, it must be noted that the evidence indicates that many individuals of all ages have had academically relevant experiences.

Such programs as work study, internships, and cooperative education are in such general usage that one might ask if they indeed are "innovative." The weakness of such programs lies in the evaluation of the experience; distinctions between having the experience and learning from it often are ignored.

The jury has barely been impaneled to judge the open or extended university as presently conceived. Market surveys, though promising, must be weighed against the hard facts of enrollments, tuition paid, and student program completions. The more non-traditional the delivery system, the greater the probable costs of the software development and logistics. Simple adaptation of existing materials, such as those of the British Open University, is no real answer.

The Message for Planners

As innovations take hold--and many will--changes in the higher education enterprise will follow. Increased

dependence on credit by examination, credit for off-campus experiences, and various forms of independent study imply a decreasing need for conventional classroom space. Instead, facilities will be needed for counseling, small-group meetings, and areas where students spend extended periods undergoing evaluation.

Most innovations will have an impact on space utilization standards and space assignment practices. A program involving 100 students in a variety of credit-hour programs and a variety of learning activities will not have an "assigned" classroom. It will require a variety of spaces to accommodate a variety of functions ranging from one-to-one meetings to large-group lectures. Meetings may occur any day of the week and on or off campus.

Budgeting and record-keeping systems may require adjustment as students take variable loads in the same "course." Continuous registration systems likely will be essential under self-pacing programs which allow student acceleration or deceleration. Academic planners should pay greater attention to the methods of instruction. Reviews can be conducted to see if new techniques might not lead to a revitalization of languishing disciplines.

Campus self-studies should cover questions of faculty development, efficient use of media, the roles of credit by examination, self-reliant and independent study, student orientation to new methods and approaches, and perhaps the right of students to alternative instructional modes.

Allocating the Dollar

The budget offices of public institutions and state departments of finance and administration will need to review their methods of budgeting, support, and auditing, if equitable dollar allocations are to be made when innovations become common. Credit by examination, even if paid for by the student, may require some fiscal consideration to the awarding institution, if for no other reason than the "purchase" of faculty support. Old notions that 9, 12, or 15-unit teaching loads imply 9, 12, or 15 hours per week in a classroom must disappear.

Institutional researchers should examine old assumptions about the way faculty use their time and collect the necessary data to establish new norms for determination of appropriate faculty workload levels. There may also be a need to consider hiring or developing new kinds of personnel. Faculty engaged in program development and management will require new definitions of required skills, workload, and perhaps salary. Similarly, technical support staff classifications must be reviewed continuously to assure responsiveness to new instructional needs.

Administrators and faculty alike should be alert to the impact of collective bargaining on innovation. The

negotiating process can result in rigidity in instructional practices, but this need not necessarily be the case.

Statewide coordinators and the staffs of college and university systems should become the individuals most knowledgeable about innovation and its successes and weaknesses. They can provide links between successful innovators and those who would try similar innovations on other campuses. They can provide perspective for boards and legislatures, helping to avoid headlong plunges into the unproven while, at the same time, recommending and supporting new approaches when campuses fail to respond to new challenges.

Above all, the planner cannot afford to be a captive of his own reporting and data-collection systems. If existing procedures cannot accommodate innovative programs, they must be adjusted accordingly. To permit past routines to stifle the new—even if of unknown long-range value—is contrary to the fundamental spirit of American higher education.

John M. Smart

A ROSTER OF INNOVATIONS

While he does not claim it to be exhaustive, John M. Smart offers the following list as representative of the kinds of innovation under way on American campuses today.

Self-paced instruction, individualized study.

Programmed learning, Personalized System of Instruction, etc.

Auto-tutorial approaches, open laboratories.

Expanded use of technology—television, audio-cassettes, computers—in instruction.

Credit by examination, advanced placement, related independent study.

Comprehensive/challenge assessments of achievement for the degree major.

Academic credit for off-campus experiences, experiential learning.

Peer instruction.

Interdisciplinary programs, innovation in instructional method and design.

Linkages between potential employer and student to increase job "fit."

Faculty and staff development programs.

Time shortened degree programs.

External degree programs, the open university.